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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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ALEXANDRIA, VA 22320-4850			ART UNIT	PAPER NUMBER
			2179	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/623,518	NAGANO ET AL.	
	Examiner	Art Unit	
	TUYETLIEN T. TRAN	2179	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 06 October 2008.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 5-15 and 31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 5-15, 31 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ . | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

1. This action is responsive to the following communication: Request for Continued Examination filed 10/06/08. **This action is made non-final.**
2. Claims 5-15 and 31 are pending in the case. Claim 5 is an independent claim.

Continued Examination Under 37 CFR 1.114

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/06/08 has been entered.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 5-12, 14, 15 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shigeta (Pub No US 2001/0050679 A1; hereinafter Shigeta) in view of in view of Brooks (Patent No. 6008809; hereinafter Brooks).

As to claim 5, Shigeta teaches:

A display device connected to a plurality of terminals via network (e.g., see Fig. 1; wherein image display 30 is connected to a plurality of image signal source 1a to 1c, see Fig. 1; note devices 113, 110 are connected through 1394 hub 108, see Fig. 10), the display device comprising:

a display (e.g., image display unit 36, see Fig. 1);

a communication unit (e.g., communication unit 40 and Image/audio receiving unit 32)

for carrying out a two-way communication with the plurality of terminals (e.g., wherein unit 40 is for sending data to the sources as shown in [0078], unit 32 is for receiving data from the sources as shown in [0075]), the communication unit being capable of sending to each terminal a window area size generated by a window area information generator for a window corresponding to the respective terminal (e.g., see Fig. 1, [0101]; wherein display attributes

information of each display area appropriated to the display areas are communicated to devices on the network; note that display attributes comprises the size, a planar positional relation as shown in [0091]), and the communication unit being capable of receiving captured image data from each terminal (e.g., see [0087]; wherein image information output by the image signal sources according to the display attributes information for each area is received by the unit 32);

the captured image data being converted into a predetermined image size by each respective terminal based on the window area size generated by the window area information generator (e.g., see [0102]; wherein the image display attributes information received from the display device allows the image signal sources to convert the image into a resolution

Art Unit: 2179

accordingly; note that display attributes comprises the size, a planar positional relation as shown in [0091]);

the window area information generator dividing a display screen of the display according to at least a number of the terminals to be displayed and a priority order of each terminal (e.g., the display screen F1 is divided into 3 display areas F2, F3, F4 to display images coming from PC1, PC2, DVD, see Fig. 6 and Fig. 7), and the window area information generator generating a window area information file including the window area size for each window and information identifying a display position for each window (e.g., see Figs. 7, 9; note that display attributes displayed on Figs. 7 and 9 comprises the size, a planar positional relation as set forth in [0091]);

a captured image data memory for storing the captured image data sent from the plurality of terminals and the window area information file (e.g., see Figs. 1, 6 and [0076]);

an image synthesizer for generating a synthesized image data from the captured image data and the window area information file stored n the captured image data memory (e.g., see Fig. 6, [0087]; wherein captured images are synthesized into signals for the image display unit);

an image processor for generating a single screen multi-window format data from the synthesized image data and outputting the display image data to the display (e.g., see Fig. 6, [0087] and [0123]; wherein synthesized image data is sent to image display unit for displaying in a single screen multi-window); and

the display for displaying the single screen multi-window format data to form a multi-window screen displayed on the display screen of the display (e.g., Figs. 1, 6);

Shigeta does not expressly teach that the display device is a projector; however, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have implemented the multi-screen display function on a projector because Shigeta suggests to the

skilled artisan that the multi-screen display functions implemented on the display device can be used for a projector (e.g., see Shigeta [0006]; wherein there is demand for display devices such as projector to have multi-screen display functions). One would have been motivated to make such a combination is to achieve the ability to display images of different image signal sources using a projector.

Shigeta suggests that the display attribute for each area and the display signal selection information occurs are communicated between displays and image sources at the time of changing the input system, at the time of changing the display area, at the time of changing the size and position of a display area, at the time of changing the number of signals to be input, at the time of changing the usage of the screen area, at the time of changing the positional relation of multiple picture-in-picture images on the image display screen, and at the time of detecting an image signal source being connected or power (e.g., Fig. 3 and [0092], [0112]). Shigeta discloses the display screen is updated accordingly (e.g., Fig. 8 and [0112]). Therefore, Shigeta teaches updating the display screen according to the number of the terminals to be displayed and the priority order of each terminal (e.g., [0091], [0092], [0118]; wherein display attributes for each area relate to the size, a planar positional relation, a positional relation of overlapping windows) when the number of terminals connected to the display is changed or the priority order of at least one terminal is changed (e.g., [0092]; wherein the display attribute for each area and the display signal selection information occurs are communicated between displays and image sources at the time of changing the number of signals to be input to the unit 32, at the time of changing the positional relation of multiple picture-in-picture images, and at the time of detecting an image signal source being connected or power).

Shigeta does not expressly teach re-divides the display screen of the display.

Brooks teaches an apparatus and method for viewing multiple windows within a dynamic window; wherein the dynamic window is re-divided according to a number of windows to be displayed is changed (e.g., see Figs. 7-12, col. 2 lines 11-51). Accordingly, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the multi-window display as taught in Shigeta to include the feature of dynamically re-dividing the display screen of the display according to a number of windows to be displayed is changed as taught by Brooks to achieve the claimed invention. As suggested by Brooks, one would have been motivated to make such a combination is to allows multiple windows to be viewed without the time consuming process of having to resize and position multiple windows (e.g., see col. 2 lines 42-48).

As to claim 6, Shigeta further teaches a display control unit including the window area information generator (e.g., see Figs. 7, 9) and the image synthesizer (e.g., see Figs. 6, 7, [0087]). Brooks teaches an insertion function for inserting a new window into a currently display screen to display the new window (e.g., see Figs. 7-12, col. 2 lines 11-51). Thus, combining Shigeta and Brooks would meet the claimed limitations for the same reasons set forth above in claim 5.

As to claim 7, Shigeta further teaches wherein the terminal that provides the captured image data to be displayed on the display screen of the display is selected in a two-way communication of the communication unit (e.g., communication unit 40 and Image/audio receiving unit 32, see Fig. 1; note that device 30 can transmit and receive signal, e.g., see step S2 and S5 in Fig. 3) by one of the network interactive display device and the terminal (e.g., a mouse or digitizer, see [0089]).

As to claim 31, Shigeta further teaches wherein when the captured image data captured using the capture function are of a part of the screen of the terminal display (e.g., see 12a, 12b in Fig. 2), a partial size of the part is sent from the terminal to the projector and the display size of the window assigned to the terminal is determined on the basis of the partial size instead of the received screen size of the terminal display (e.g., see Fig. 6 and [0102]).

As to claim 8, Shigeta further teaches wherein the display control unit has an expansion display function for expanding a predetermined window from among a plurality of windows forming the multi-window screen displayed on the display screen of the display (e.g., see Fig. 8).

As to claim 9, Shigeta teaches the limitations of claim 5 for the same reasons as discussed with respect to claim 5 above. Shigeta fails to expressly teach a single-window screen selection function for switching the display screen from a predetermined window from among a plurality of windows forming the multi-window screen displayed on the display screen of the display to a single-window full screen. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the a single-window function for switching the display screen from a predetermined window from among a plurality of windows forming a multi-window screen displayed on the display screen of the display to a single-window full screen, in view of Shigeta, because Shigeta suggests to the skilled artisan that the size and position of the display area can be changed (e.g., see [0089], [0112]). One would have been motivated to make such a combination is to optimize the full resource of the display and to get user's attention on the window of interest.

As to claim 10, Brooks teaches wherein the display control unit has an erase function for erasing a predetermined window from among a plurality of windows forming the multi-window screen displayed on the display screen of the display (e.g., see Figs. 7-12, col. 2 lines 11-51). Thus, combining Shigeta and Brooks would meet the claimed limitations for the same reasons set forth above in claim 5.

As to claim 11, Shigeta teaches a network interactive display device and the terminal are communicated in a two-way communication of the communication unit (e.g., see [0087], [0123], Fig. 10). Shigeta teaches interactively selecting a predetermined window from among the list of windows displayed in the display device (e.g., see Figs. 6, 8). Therefore, combining Shigeta and Brooks would meet the claimed limitations for the same reasons set forth above in claim 5.

As to claim 12, Shigeta further teaches wherein the image captured data received from the terminal is obtained by designating the whole or a portion of the display screen of the terminal (e.g., see Fig 6).

As to claim 14, Shigeta teaches wherein a controller receives, through the communication unit (e.g., unit 40 and 32 in Fig 1), the captured image data (e.g., [0087]), having the converted size equal to the display size of the window assigned to the terminal, from the terminal to which the window area size is sent (e.g., see [0091], [0102]), and the controller controls the display control unit to synthesize the received captured image data into the single screen multi-window format data to be displayed on the display screen of the display (e.g., see Fig. 8 and [0087]).

As to claim 15, Shigeta further teaches wherein an aspect ratio of the window assigned to the terminal to be displayed is equalized to an aspect ratio of the display screen of the display of the terminal (e.g., note that display attributes for each area also relates to aspect ratio, see [0090] and [0091]).

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shigeta in view of Brooks further in view of Mondal (Pub No US 2003/0110244 A1, hereinafter Mondal).

As to claim 13, Shigeta and Brooks teach the limitations of claim 5 for the same reasons as discussed with respect to claim 5 above. However, Shigeta and Brooks fail to expressly teach that the captured image data received from the terminal is obtained by detecting and capturing only a change on the display screen of the terminal. Mondal, though, teaches the captured image data received from the terminal is obtained by detecting and capturing only a change on the display screen of the terminal (e.g., see [0022]).

It would have been obvious to one of ordinary skill in the art, having the teachings of Shigeta, Brooks and Mondal before him at the time the invention was made to have utilized the method and function of only transmitting the changes in display data as taught by Mondal to the multi-area display system as taught by Shigeta to reduce the amount of data transmitted to the maintenance computing system so as to reduce the affect on network bandwidth (e.g., see Mondal [0022]).

Response to Arguments

7. Applicant's remarks filed on 10/06/08 have been fully considered but they are not persuasive.

Art Unit: 2179

a) Applicant argues with respect to claim 5 that the prior art of Shigeta does not disclose “a communication unit for carrying out a two-way communication with the plurality of terminals, the communication unit being capable of sending to each terminal a window area size generated by a window area information generator for a window corresponding to the respective terminal, and the communication unit being capable of receiving captured image data from each terminal” (e.g., see Applicant's remark page 8, paragraph 1).

In response, the examiner respectfully disagrees. As address in the foregoing rejection of claim 1, Shigeta discloses a communication unit (e.g., communication unit 40 and Image/audio receiving unit 32) for carrying out a two-way communication with the plurality of terminals (e.g., wherein unit 40 is for sending data to the sources as shown in [0078], unit 32 is for receiving data from the sources as shown in [0075]), the communication unit being capable of sending to each terminal a window area size generated by a window area information generator for a window corresponding to the respective terminal (e.g., see Fig. 1, [0101]; wherein display attributes information of each display area appropriated to the display areas are communicated to devices on the network; note that display attributes comprises the size, a planar positional relation as shown in [0091]), and the communication unit being capable of receiving captured image data from each terminal (e.g., see [0087]; wherein image information output by the image signal sources according to the display attributes information for each area is received by the unit 32). For at least these reasons, the examiner maintains the position that Shigeta teaches the communication unit as claimed in claim 5.

b) Applicant argues with respect to claim 5 that the prior art of Shigeta does not disclose “the captured image data being converted into a predetermined image size by each respective

Art Unit: 2179

terminal based on the window area size generated by the window area information generator” (e.g., see Applicant's remark page 8, paragraph 1).

In response, the examiner respectfully disagrees. As address in the foregoing rejection of claim 1, Shigeta discloses the captured image data being converted into a predetermined image size by each respective terminal based on the window area size generated by the window area information generator (e.g., see [0102]; wherein the image display attributes information received from the display device allows the image signal sources to convert the image into a resolution accordingly; note that display attributes comprises the size, a planar positional relation as shown in [0091]).

c) Applicant argues with respect to claim 5 that the prior art of Shigeta does not disclose “the window area information generator dividing a display screen of the display according to at least a number of the terminals to be displayed and a priority order of each terminal, and the window area information generator generating a window area information file including the window area size for each window and information identifying a display position for each window” (e.g., see Applicant's remark page 8, paragraph 1).

In response, the examiner respectfully disagrees. As address in the foregoing rejection of claim 1, Shigeta discloses the window area information generator dividing a display screen of the display according to at least a number of the terminals to be displayed and a priority order of each terminal (e.g., the display screen F1 is divided into 3 display areas F2, F3, F4 to display images coming from PC1, PC2, DVD, see Fig. 6 and Fig. 7), and the window area information generator generating a window area information file including the window area size for each window and information identifying a display position for each window (e.g., see Figs. 7, 9; note that display attributes displayed on Figs. 7 and 9 comprises the size, a planar positional relation as set forth in [0091]). Thus, the examiner maintains the position on this issue.

Art Unit: 2179

d) Applicant argues with respect to claim 5 that the prior art of Shigeta does not disclose "an image processor for generating a single screen multi-window format data from the synthesized image data and outputting the single screen multi-window format data to the display; and the display for projecting the single screen multi-window format data to form a multi-window screen displayed on the display screen of the display" (e.g., see Applicant's remark page 8, paragraph 2).

In response, the examiner respectfully disagrees. As address in the foregoing rejection of claim 5, Shigeta teaches the image information output by the image signal sources according to the display attributes information for each area is received by the unit 32. The received image information is synthesized into signals for the image display unit (e.g., see Fig. 6, [0087], [0123]). As seen form Figure 6, there is shown a single multi-window screen that displays data from a plurality of image sources such as F1-F4 (e.g., see [0098]). Therefore, the examiner concludes that the cited prior art of Shigeta teaches this limitation.

e) Applicant argues with respect to claim 5 that the prior art of Shigeta does not disclose "dividing a display screen of the display according to at least a number of terminals to be displayed and a priority order of each terminal" (e.g., see Applicant's remark page 8, paragraph 3).

In response, the examiner respectfully disagrees. Shigeta teaches dividing a display screen of the display according to at least a number of the terminals to be displayed and a priority order of each terminal (e.g., the display screen F1 is divided into 3 display areas F2, F3, F4 to display images coming from PC1, PC2, DVD, see Fig. 6 and Fig. 7). Therefore, the examiner maintains the position on this issue.

f) Applicant argues with respect to claim 5 that the prior art of Brooks does not disclose "re-divide the display screen of the display according to the number of the terminals to be displayed and the priority order of each terminal when the number of terminals connected to the display is changed or the priority order of at least one terminal is changed" (e.g., see Applicant's remark page 9, paragraph 3).

In response, the examiner respectfully disagrees and notes this limitation is well-addressed as rejected supra.

Conclusion

The prior art made of record on form PTO-892 and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 C.F.R. § 1.111(c) to consider these references fully when responding to this action.

It is noted that any citation to specific, pages, columns, lines, or figures in the prior art references and any interpretation of the references should not be considered to be limiting in any way. A reference is relevant for all it contains and may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art. In re Heck, 699 F.2d 1331, 1332-33,216 USPQ 1038, 1039 (Fed. Cir. 1983) (quoting In re Lemelson, 397 F.2d 1006,1009, 158 USPQ 275,277 (CCPA 1968)).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TuyetLien (Lien) T. Tran whose telephone number is 571-270-1033. The examiner can normally be reached on Mon-Friday: 7:30 - 5:00, off on alternating Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Weilun Lo can be reached on 571-272-4847. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TuyetLien T Tran/

Examiner, Art Unit 2179

/Weilun Lo/

Supervisory Patent Examiner, Art Unit 2179